

# PROCESS FOR PRE-TREATING AND DE-SALINATING SEA WATER

## Abstract

Water containing dissolved salts, such as calcium sulfate, calcium chloride, magnesium sulfate, magnesium chloride, sodium carbonate, sodium chloride, sodium sulfate, calcium bicarbonate, and mixtures thereof, is treated to reduce the concentration of those salts. About 0.1 to about 60 g/L of sodium hydroxide, sodium carbonate, potassium hydroxide, potassium carbonate, calcium hydroxide, calcium carbonate, aluminum hydroxide, aluminum sulfate, aluminum potassium sulfate, and mixtures thereof is added to the water, whereby a precipitate forms in the water. The precipitate is separated from said water and the water is desalinated using reverse osmosis, flash evaporation, or another method. The process is preferably performed by first adding calcium oxide or calcium hydroxide, separating the precipitate that forms, then adding sodium hydroxide and sodium carbonate to form a second precipitate.